

CLAIMS

1. A pearlescent pigment comprising a substrate and at least one selectively light absorbing layer of a chalcogenide and/or oxychalcogenide, excluding rare earth and yttrium sulfides and rare earth and yttrium oxysulfides.
2. A pearlescent pigment according to claim 1, wherein the chalcogenide and/or oxychalcogenide is a metal chalcogenide and/or metal oxychalcogenide with the metal being selected from group 2 and/or 4-16 of the periodic system.
3. A pearlescent pigment according to claim 1, wherein the substrate is a platelet-shaped, spherical or needle-shaped substrate.
4. A pearlescent pigment according to claim 2, wherein the substrate is a platelet-shaped, spherical or needle-shaped substrate.
5. A pearlescent pigment according to claim 1, wherein the substrate is platelet-shaped and is of mica, SiO₂, aluminum oxide, glass, micaceous iron oxide, oxidized graphite, aluminum oxide-coated graphite, basic lead carbonate, barium sulfate, chromium oxide, BN, MgO, Si₃N₄, or metal.
6. A pearlescent pigment according to claim 1, wherein the substrate is a pearlescent or pearlescent multilayer pigment.

7. A pearlescent pigment according to claim 1, wherein the substrate is coated or uncoated SiO₂ spheres.

8. A pearlescent pigment according to claim 1, wherein the substrate is a needle-shaped iron oxide.

9. A pearlescent pigment according to claim 1, wherein the substrate is a metal platelet which is aluminum or titanium, passivated by inorganic treatment.

10. A pearlescent pigment according to claim 1, wherein the selectively light absorbing layer is a sulfide, oxysulfide, selenide and/or sulfo-selenide.

11. A pearlescent pigment according to claim 1, wherein the thickness of the selectively light absorbing layer is from 5 to 500 nm.

12. A pearlescent pigment according to claim 1, wherein the pigment is further coated on top of the selectively light absorbing layer with one or more layers of metal oxides, metal oxide hydrates, metal fluorides and/or semitransparent metal layers.

13. A pearlescent pigment according to claim 12, wherein the further coating on top of the selectively light absorbing layer is a layer of metal oxide selected from TiO₂ and/or iron oxide and/or a semitransparent metal layer of Al, Mo and/or Cr.

14. A process for the preparation of a pigment according to claim 1 comprising precipitating a layer of an oxide, hydroxide, mixed oxide and/or mixed hydroxide onto the substrate and then converting the oxide, hydroxide, mixed oxide and/or mixed hydroxide into a chalcogenide and/or oxychalcogenide.

15. A process according to claim 14, wherein the conversion is carried out in a fluidized bed reactor.

16. A process according to claim 14, wherein the conversion is carried out with a reactive gas which comprises fluorine and/or HF, alone, or in combination with H₂S, CS₂, sulfur or a mixture thereof.

17. A process according to claim 15, wherein the conversion is carried out with a reactive gas which comprises fluorine and/or HF, alone, or in combination with H₂S, CS₂, sulfur or a mixture thereof.

18. A process according to claim 16, wherein, additionally, an inert gas is present during the conversion.

19. A process according to claim 18, wherein the inert gas is Ar or N₂.

20. A process according to claim 14, wherein the substrate is platelet-shaped and is of mica, SiO₂, aluminum oxide, glass, micaceous iron oxide, oxidized graphite, aluminum

oxide-coated graphite, basic lead carbonate, barium sulfate, chromium oxide, BN, MgO, Si₃N₄, a metal, a pearlescent pigment or a pearlescent multilayer pigment.

21. The process of claim 14, wherein the substrate is coated or uncoated SiO₂-spheres or needle-shaped iron oxides.

22. A process according to claim 14, wherein the oxide, hydroxide, mixed oxide and/or mixed hydroxide is doped with metal ions, silicon oxide, aluminum oxide, boron oxide, sulfur, phosphate ions and/or sulfate ions.

23. A process according to claim 22, wherein the doping is with metal ions selected from silicon, vanadium, chromium, aluminum, cerium, neodymium, praseodymium, cobalt, nickel and/or zinc.

24. A process for the preparation of a pigment according to claim 1, comprising precipitating the selectively light absorbing layer onto the substrate by adding a chalcogenide or oxychalcogenide solution and a metal salt or metal complex solution to a suspension of the substrate and then drying the precipitated layer.

25. A paint, powder coating, paper coating, plastic, cosmetic, ink, food or drug composition comprising a pigment of claim 1.

26. A security-enhanced document or article comprising a pigment of claim 1.

27. A phosphorescent, fluorescent or luminescent material for security, optical or projection screen applications, which comprises a pigment of claim 1.